

The Kinsey scale is ill-suited to most sexuality research because it does not measure a single construct

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Jabbour et al. (1) provide evidence that some men are aroused by both men and women. The authors conclude that their findings support the validity of the Kinsey scale (2), opposing concerns raised by Ganna et al. (3). We suggest that the findings from Jabbour et al. do not meaningfully support the validity of the Kinsey scale, and we present analyses of Jabbour et al.'s data that reinforce the concerns raised by Ganna et al. and others (see refs. 4 and 5).

The main problem with the Kinsey scale is that it conflates two distinct constructs: degree of sexual attraction/behavior toward opposite-sex others and degree of sexual attraction/behavior toward same-sex others. These two constructs are put in opposition to each other to yield a single number, such that a higher score on homosexual interest necessarily equates to a lower score on heterosexual interest.

This forced trade-off would not be a problem if heterosexual and homosexual interest were, in reality, perfectly inversely related, and hence opposite ends of a single continuum. But there is no evidence that this is the case (5, 6). Indeed, Jabbour et al.'s (1) own data provide compelling evidence to the contrary: Genital arousal to male stimuli and to female stimuli are not significantly associated (multilevel model: $\gamma = 0.09$, $P = 0.326$) when controlling for genital arousal to neutral stimuli (and positively associated if the latter is not controlled; $\gamma = 0.83$, $P < 0.001$).

One might counter that the Kinsey scale is only intended to measure relative heterosexual and homosexual interest, and, in that sense, it is a suitable measure. However, that information can be derived

from separate reports of heterosexual and homosexual interest. Additionally, why would we use a measure that does not reflect the structure of the underlying phenomenon? Such a mismatch would stymie attempts to link sexuality to other constructs, including its biological or environmental influences. Any associations with the Kinsey scale could be driven by variability in heterosexual interest, homosexual interest, or both, without any way to tell the difference.

This issue is illustrated in Ganna et al.'s (3) genome-wide association study, which showed that the genetic effects that differentiate heterosexuals from nonheterosexuals (i.e., individuals who have not had versus have had same-sex partners) are not the same as those that differentiate among nonheterosexuals with lower versus higher proportions of same-sex partners (e.g., bisexual versus gay individuals). This absence of a single genetic dimension from same-sex to opposite-sex behavior could be because nonheterosexuals differ from heterosexuals in their homosexual interest, whereas bisexuals differ from gay individuals in their heterosexual interest, which appear to be different constructs. Given strong genetic correlations ($r_g > 0.9$; figure 5C of ref. 3) among sexual behavior, attraction, identity, and fantasy, this suggests that Kinsey-type scales, which place heterosexuality and homosexuality at opposite ends of the same continuum, are ill suited for genetic research on sexuality. For similar reasons, any research on sexuality would be better served by assessments that measure heterosexual and homosexual interest separately (e.g., refs. 4 and 5).

- 1 J. Jabbour et al., Robust evidence for bisexual orientation among men. *Proc. Natl. Acad. Sci. U.S.A.* **117**, 18369–18377 (2020).
- 2 A. C. Kinsey, W. B. Pomeroy, C. E. Martin, *Sexual Behavior in the Human Male* (Saunders, Philadelphia, PA, 1948).
- 3 A. Ganna et al.; 23andMe Research Team, Large-scale GWAS reveals insights into the genetic architecture of same-sex sexual behavior. *Science* **365**, 882–889 (2019).
- 4 R. L. Sell, Defining and measuring sexual orientation: A review. *Arch. Sex. Behav.* **26**, 643–658 (1997).
- 5 A. Hale, L. B. Miller, J. Weaver, S. Q. Husney, R. Henares, The dual scales of sexual orientation. *J. Bisex.* **19**, 483–514 (2019).
- 6 M. D. Storms, Theories of sexual orientation. *J. Pers. Soc. Psychol.* **38**, 783–792 (1980).

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